



Versaflex™ HC 2110-43N

Thermoplastic Elastomer

Key Characteristics

Product Description

Versaflex™ HC 2110-43N is a unique TPE designed for the demanding requirements of pharmaceutical packaging.

- Good Compression Set
- Good Reseal Characteristics

General

Material Status	• Commercial: Active		
Regional Availability	• Africa & Middle East	• Latin America	• North America
Agency Ratings	• ISO 10993 Part 4	• ISO 10993 Part 5	• USP Class VI ¹
RoHS Compliance	• RoHS Compliant		
Appearance	• Natural Color		
Processing Method	• Injection Molding		

Technical Properties ²

Physical	Typical Value (English)	Typical Value (SI)	Test Method
Specific Gravity	0.980	0.980	ASTM D792
Elastomers	Typical Value (English)	Typical Value (SI)	Test Method
Tensile Stress ^{3,4} (100% Strain, 73°F (23°C))	173 psi	1.19 MPa	ASTM D412
Tensile Stress ^{3,4} (300% Strain, 73°F (23°C))	368 psi	2.54 MPa	ASTM D412
Tensile Strength ^{3,4} (Break, 73°F (23°C))	723 psi	4.98 MPa	ASTM D412
Tensile Elongation ^{3,4} (Break, 73°F (23°C))	680 %	680 %	ASTM D412
Compression Set			ASTM D395B
73°F (23°C), 22 hr	12 %	12 %	
158°F (70°C), 22 hr	22 %	22 %	
Hardness	Typical Value (English)	Typical Value (SI)	Test Method
Durometer Hardness (Shore A, 10 sec)	43	43	ASTM D2240
Fill Analysis	Typical Value (English)	Typical Value (SI)	Test Method
Apparent Viscosity			ASTM D3835
392°F (200°C), 11200 sec ⁻¹	11.8 Pa·s	11.8 Pa·s	

Processing Information

Injection	Typical Value (English)	Typical Value (SI)
Rear Temperature	340 to 380 °F	171 to 193 °C
Middle Temperature	380 to 470 °F	193 to 243 °C
Front Temperature	400 to 490 °F	204 to 254 °C
Nozzle Temperature	420 to 490 °F	216 to 254 °C
Mold Temperature	60.0 to 100 °F	15.6 to 37.8 °C
Back Pressure	0.00 to 120 psi	0.00 to 0.827 MPa
Screw Speed	25 to 100 rpm	25 to 100 rpm

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Injection Notes

Purge thoroughly before and after use of this product with a low flow (0.5 - 2.5 MFR) polyethylene (PE) or polypropylene (PP).

Versaflex™ HC 2110-43N has excellent melt stability. Maximum residence times may vary, depending on the size of the barrel. Generally, the barrel should be emptied if it is idle for periods of 8 - 10 minutes or longer.

Drying is not Required

Injection Speed: 1 to 3 in/sec
 1st Stage - Boost Pressure: 25 to 1000 psi
 2nd Stage - Hold Pressure: 30% of Boost
 Hold Time (Thick Part): 3 to 10 sec
 Hold Time (Thin Part): 1 to 3 sec

Notes

- ¹ Please contact PolyOne GLS Thermoplastic Elastomers for a complete copy of the GLS Healthcare Policy.
- The Customer must notify GLS of any FDA Class I and/or European Union Class I medical devices for each specific product and application.
 - The Customer shall not knowingly manufacture, use, sell or otherwise supply, directly or indirectly products or compounds made from GLS products in any of the following without prior written approval by GLS for each specific product or application:
 - Cosmetics
 - Drugs and other Pharmaceuticals
 - Temporary or permanent implantation in the human body, regardless of the intended duration of implantation
 - Class II and Class III Medical Devices as defined in 21 CFR 860.3 ("Medical Devices")
 - Class IIa, IIb and III as defined in Directive 93/42/EEC

² Typical values are not to be construed as specifications.

³ Die C

⁴ 2 hr

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